LISTING OF THE CLAIMS

There are no amendments to the claims.

1. (Original): In an optical fiber communications system including an optical fiber, a method for compensating for dispersion effects in the optical fiber, the method comprising:

receiving at least two low-speed channels, each low-speed channel allocated a different frequency band of an optical fiber communications system for transmission across the communications system;

for each low-speed channel, estimating an attenuation caused by dispersion resulting from transmission of the low-speed channel across the optical fiber in the frequency band allocated to the low-speed channel;

adjusting a power of each low-speed channel to compensate for the estimated attenuation caused by dispersion; and

frequency division multiplexing the power-adjusted low-speed channels to produce an electrical high-speed channel for transmission across the communications system.

2. (Original): The method of claim 1 wherein the step of adjusting a power of each low-speed channel comprises applying a gain to each low-speed channel which is equal in magnitude to the estimated attenuation for that low-speed channel.

3. (Original): The method of claim 2 wherein the step of adjusting a power of each low-speed channel comprises applying a constant gain to each low-speed channel which is equal in magnitude to the estimated attenuation at a center frequency of the frequency band allocated to the low-speed channel.

4. (Original): The method of claim 1 wherein the step of adjusting a power of each low-speed channel comprises applying a gain ramp to the low-speed channels.

5. (Original): The method of claim 1 wherein the step of estimating an attenuation caused by dispersion comprises estimating an attenuation caused by chromatic dispersion.

6. (Original): The method of claim 1 wherein the step of estimating an attenuation caused by dispersion comprises estimating an attenuation caused by polarization mode dispersion.

7. (Original): An optical fiber communications system for transmitting at least two low-speed channels across the communications system, the communications system comprising:

a variable gain block for adjusting a power of each low-speed channel to compensate for an estimated attenuation caused by dispersion resulting from transmission of the low-speed channel across an optical fiber in a frequency band allocated to the low-speed channel; and

a FDM multiplexer coupled to the variable gain block for combining the power-adjusted low-speed channels into an electrical high-speed channel suitable for transmission across the communications system.

8. (Original): The communications system of claim 7 wherein the variable gain block applies a gain to each low-speed channel which is equal in magnitude to the estimated attenuation for that low-speed channel.

9. (Original): The communications system of claim 8 wherein the variable gain block applies a constant gain to each low-speed channel which is equal in magnitude to the estimated attenuation at a center frequency of the frequency band allocated to the low-speed channel.

10. (Original): The communications system of claim 7 wherein the variable gain block applies a gain ramp to the low-speed channels.

11. (Original): The communications system of claim 7 wherein the variable gain block is for adjusting a power of each low-speed channel to compensate for an estimated attenuation caused by chromatic dispersion.

12. (Original): The communications system of claim 7 wherein the variable gain block is for adjusting a power of each low-speed channel to compensate for an estimated attenuation caused by polarization mode dispersion.